

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: TORU et al.
Serial No.: 10/551,124
Filed: September 26, 2005
For: ULTRA-LIGHT SOUND INSULATOR
Group: 1788
Examiner: CHANG, Victor S.
Conf. No.: 4032

AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 17, 2011

Sir:

This is in response to the Office Action mailed May 13, 2011, in connection with the above-identified application, a Notice of Appeal having been filed August 15, 2011. The amendments are listed below and set forth on the following pages.

Amendments to the Claims; and

Remarks are included following the amendments.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An ultra-light sound insulator, comprising:
a sound absorption layer that is light in weight and has a thickness in a range of 1 to 50 mm, the thickness varying from one region to another in a range not greater than 50 mm, and a density in a range of 0.01 to 0.2 g/cm³;
and

an air-impermeable resonance layer in the form of a film having a thickness in a range of 10 to 200μm that is bonded to said sound absorption layer via an adhesive layer and has an area-weight of not greater than 200 g/m²,

wherein an adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 1 to 20 N/25 mm under conditions of a peel angle of 180 degrees and a peel width of 25 mm,

an adhesion area of said adhesive layer is 50 to 100% of a whole interface between said sound absorption layer and said air-impermeable resonance layer so that resonance due to a total mass of said air-impermeable resonance layer and said sound absorption layer occurs in addition to membrane resonance of said air-impermeable resonance layer,
and

said sound absorption layer is adapted to face to a vehicle body panel, while said air-impermeable resonance layer is adapted to face to a vehicle interior.

2-5. (Canceled).

6. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer has an initial compression repulsive force in a range of 2 to 200 N.

7-13. (Canceled)

14. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer a density in a range of 0.03 to 0.08 g/cm³.

15. (Canceled)

16. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 3 to 10 N/25 mm under conditions of a peel angle of 180 degrees and a peel width of 25 mm.

17. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said adhesion area of said adhesive layer is 80 to 100% of a whole interface between said sound absorption layer and said air-impermeable resonance layer.

18. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer a density in a range of 0.03 to 0.08 g/cm³, said air-impermeable resonance layer has an area-weight of not greater than 300 g/m², said adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 3 to 10 N/25 mm under conditions of a peel angle of 180 degrees and a peel width of 25 mm and said adhesion area of said adhesive layer is 80 to 100% of a whole interface between said sound absorption layer and said air-impermeable resonance layer.

19. (Canceled).

20. (Previously Presented) An ultra-light sound insulator in accordance with claim 5, wherein said sound absorption layer has an initial compression repulsive force in a range of 20 to 100 N.

21-27. (Canceled).

28. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein the thickness of said sound absorption layer is in a range of 5-40 mm.

REMARKS

By this amendment, Applicants have canceled claim 15.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 1089.45436X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

/Alan E. Schiavelli/

Alan E. Schiavelli
Registration No. 32,087

(703) 312-6600